Libby Asbestos Superfund Site: Community Information and Involvement for Libby Residents

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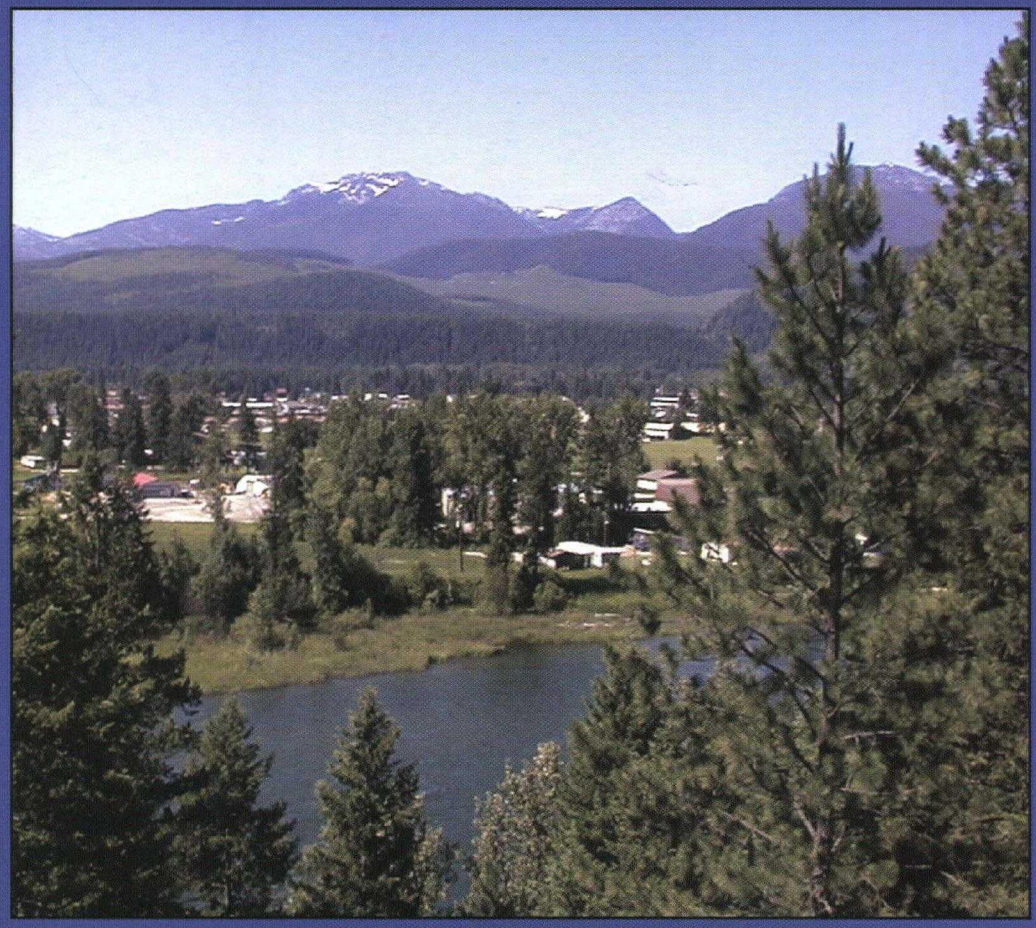
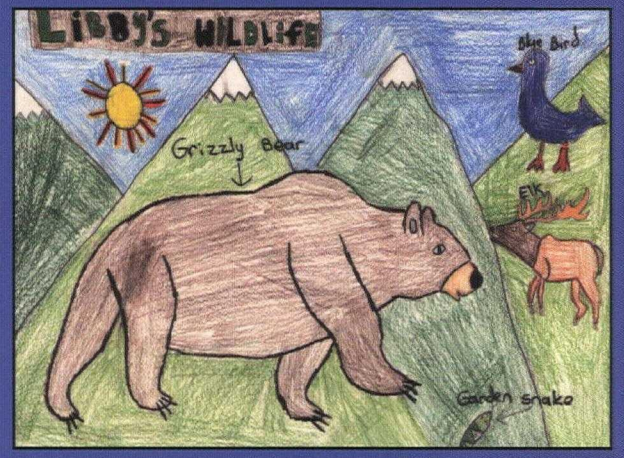
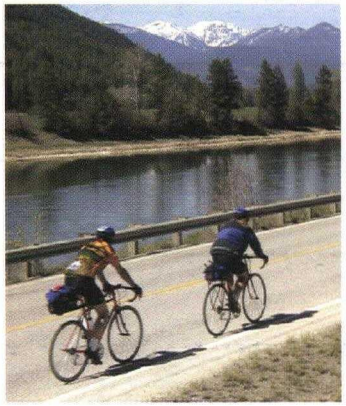




United States Environmental Protection Agency - Region 8

November 2002

Welcome to Libby!



Tucked away in the northwest corner of Montana, just 35 miles east of Idaho and 65 miles south of Canada, is the small western town of Libby. It sits in a picturesque valley carved by the Kootenai River, with the spectacular Cabinet Mountains to the south. Libby has a population of less than 2,900, but about 12,000 people live within a ten-mile radius. Libby is the Lincoln County seat, and its assets include clean water, beautiful scenery, and recreational opportunities such as fishing, hiking, hunting, boating, and skiing.

Are You New to Libby?

Contact the EPA Information Center (293-6194) for the latest information on the work being done by the U.S. Environmental Protection Agency (EPA). The staff will answer your questions, or direct you to the appropriate resource. You can find out if your property has been screened for asbestos and if any cleanup work was done. Also, you can see samples of vermiculite in various forms, and you can pick up a number of helpful flyers and brochures.

Rest assured, Libby is a great place to live. The health effects seen today are primarily related to past exposures to miners and their families. EPA has cleaned up the major source areas around town. As the cleanup progresses, the remaining smaller source areas on private property will be taken care of. EPA's goal is to identify and remove all soil contaminated with asbestos. You can walk the streets without fear of asbestos exposure.

Until the cleanup is finished, any exposures to asbestos are likely to result from disturbance of vermiculite. So, learn what it looks like and where it is likely to be found - then leave it alone! **Keep reading for lots of helpful tips and information.**

Over the last decade, Libby residents became aware of mounting deaths (over 190) from asbestos-related disease in former mine and mill workers and their families. These diseases are often confused with emphysema or other ailments, so many more individuals may have died without being accurately diagnosed. As of 1999, over 300 people were known to have asbestos-related disease, and that number continues to rise. Some of these people had no known connection to the mine.

In November 1999, EPA in cooperation with the Agency for Toxic Substances and Disease Registry (ATSDR) and the Montana Department of Environmental Quality (DEQ) began an emergency response action to protect public health.

Asbestos Contamination in Libby

Asbestos contamination in Libby is primarily related to historic activities at the W.R. Grace vermiculite mine north of town. Vermiculite ore from this mine is contaminated by asbestos, and Libby residents have been exposed to it in several ways:

- ✓ **Dust in the Mine and Processing Centers.** Workers at the Mine, Screening Plant, and Export Plant were continually exposed to asbestos dust, and they unwittingly brought that dust home, exposing their families to asbestos.
- ✓ **Airborne Dust.** The mill released large amounts of asbestos dust. In 1969 alone, the large stack released 24,000 pounds of dust a day (approximately 5,000 pounds of asbestos). Depending on wind conditions, much of this dust may have blown into Libby.
- ✓ **Vermiculite.** Residents took vermiculite home for use in attics and gardens. It was used as fill in many locations in town, including the school tracks and the ice rink, and large piles of vermiculite were common sights in Libby. Zonolite insulation was also sold commercially and many residents installed it in their homes, another dusty job.

WELCOME!

Asbestos and Vermiculite

Asbestos is made up of long, thin fibers that are strong and heat-resistant. This has led to its use in thousands of products (such as building materials and heat-resistant fabrics). The fibers do not dissolve or breakdown in any way. They can remain airborne for quite some time, but eventually settle into soil, sediment, or other materials (e.g. carpet).

Amphibole asbestos describes the mineral family that includes *Libby asbestos*. Amphibole asbestos fibers are generally straighter and break apart more easily than other asbestos fibers. They are also believed to be more toxic than fibers from other types of asbestos.

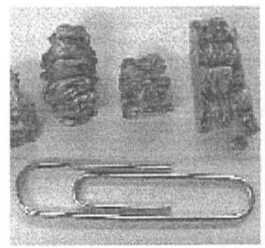
Tremolite-Actinolite Series Asbestos

- ✓ This is the type of asbestos of concern in Libby. It is a distinct and relatively uncommon form of asbestos that is often referred to as *tremolite*, *Libby amphibole*, or *Libby asbestos*.
- ✓ It is not a commercially viable mineral, but a contaminant in the vermiculite ore from the Libby mine.
- ✓ Individual fibers are too small to be seen without a microscope.
- ✓ Asbestos ore is occasionally seen locally, usually as decorative landscape rock or driveway material.
- ✓ The ore is waxy-silky white to greenish white, with fibrous strands running across the surface.

Not all vermiculite is contaminated. However, it is not possible to distinguish Libby vermiculite with the naked eye, and all vermiculite should be handled with care.

Vermiculite and *Zonolite™*

- ✓ Vermiculite is a silver-gold to gray-brown mineral that is flat and shiny in its natural state and puffed and dull in its expanded shape.
- ✓ It was discovered near Libby in 1881. In 1919, Dr. Edward Alley found that vermiculite expanded (or "popped") when heated. This created pockets of air that made the material suitable for use as insulation or as a soil amendment.
- ✓ Dr. Alley founded the **Zonolite Company** and developed the mine and processing facility north of Libby, producing expanded vermiculite as ***Zonolite™***. ***Zonolite™*** was lightweight, sturdy, and inexpensive. It was used in everything from construction to school craft projects.



Expanded Vermiculite Sample

It is estimated that the Libby mine was the source of over 80 percent of all vermiculite sold in the U.S. from 1919 to 1990; and, over its lifetime, it employed more than 1,900 people. W. R. Grace bought the mine and processing facility in 1963 and operated it until 1990.

The asbestos veins in the ore body have contaminated most, if not all, of the material taken from the mine. Milling removed much of the asbestos from the finished product, but a significant amount remained. Because asbestos fibers are so small, this contamination is not evident to the naked eye.

THE ABCs OF ASBESTOS

How is Asbestos Harmful?

Asbestos-Related Diseases

Inhalation of asbestos fibers is the primary cause of asbestos-related disease. These fibers are very small and sharp. If they are not expelled through coughing or mucus secretions, they become embedded in the lung. Inhaled asbestos is associated with three major diseases:

- Asbestosis. Asbestos causes scaring of lung tissue that eventually restricts one's ability to inhale.
- Lung Cancer. Asbestos increases the risk of lung cancer, *especially* in combination with exposure to tobacco smoke.
- Mesothelioma. Asbestos is thought to be the primary cause of this rare and deadly type of cancer of the lung lining and chest wall.

What If I've Been Exposed to Asbestos?

Almost everyone has been exposed to asbestos to some degree. Air, water, food, and many consumer products may contain small amounts of asbestos. Asbestos is released from natural deposits in the earth and as a result of deterioration of asbestos-containing products.

Harmful effects generally result from continuous exposure over a long period of time or less frequent, but higher concentration, exposures.

If you suspect you have had a significant exposure to asbestos, there are some things you should do:

1. Stop on-going exposures
2. Stop exposure to tobacco smoke
3. Get regular health checkups
4. Get prompt medical attention for any respiratory illness to prevent infections that can attack weakened lungs.

Not all persons exposed to asbestos will develop asbestos-related diseases.

See Your Doctor

Individuals exposed to asbestos should inform their doctor of their history and any symptoms. An exam, including a chest x-ray and a lung function test, may be recommended.

Symptoms may not become apparent until long after exposure. If you have any of the following symptoms, you shouid consult your doctor without delay:

- ✓ Shortness of breath
- ✓ A cough or a change in cough pattern
- ✓ Blood in the fluid coughed up
- ✓ Pain in the chest or abdomen
- ✓ Difficulty in swallowing or prolonged hoarseness
- ✓ Significant weight loss

Protect Yourself From Tobacco Smoke!

Eliminating tobacco smoke is the single most important thing you can do to avoid or limit the harmful effects of asbestos. Lungs that are damaged from tobacco are much more susceptible to damage from asbestos.

Lung cancer can be caused by either tobacco smoke or asbestos exposure alone, but exposure to b*oth* multiplies your risk. If asbestos exposure increases your chance of getting cancer by 5 times and smoking increases your chance of getting cancer by 12 times, being exposed to both of them can increase your chance of developing cancer by up to **60 times!**

Evidence shows that quitting smoking will reduce the risk of lung cancer among those exposed to asbestos, perhaps by as much as half after 5 years without smoking. People who were exposed to asbestos at any time should not smoke.

- ✓ If you don't smoke, don't start.
- ✓ If you do smoke, take advantage of assistance in cutting back or quitting.
- ✓ Educate your children on the dangers of smoking.
- ✓ Protect yourself and your children from secondhand srhoke.

ASBESTOS-RELATED HEALTH RISKS

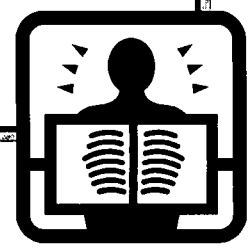
Getting the Help You Need

Medical Services for Asbestos-Related Disease

The Center for Asbestos Related Disease (CARD) in Libby (293-9274) is your local source for information and testing for asbestos-related disease. The CARD can provide:

- ✓ Diagnostic tests (pulmonary function tests and chest x-rays) and diagnosis of asbestos-related disease
- ✓ Referrals to specialists
- ✓ Information on the prevention and treatment of asbestos-related disease

In the future, costs for diagnostic testing may be reimbursed by the fund established by W.R. Grace, as a result of a settlement with EPA.



In 2000 and 2001, ATSDR provided medical screening for more than 7,000 residents or former residents of Libby. The testing was done as part of the Libby Community Environmental Health Project (LCEHP). ATSDR will continue to support the community by:

- ✓ Providing community health education
- ✓ Consulting with agencies working in Libby
- ✓ Continuing to evaluate the health effects of exposure to asbestos
- ✓ Conducting a formal public health assessment

For more information, you can call ATSDR toll free at 1-866-457-2690 ext. 5007

ATSDR
ACENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

Help to Stop Smoking....

Protecting yourself from tobacco smoke is the single most important health measure you can take. But, as any smoker knows, it is not easy. Fortunately, there is help available to you locally in the form of guidance, tools, and moral support.

In Libby, your primary source for assistance in stopping smoking is Libby Community Interagencies. The Tobacco Smoke Prevention Coordinator can be reached at 293-3951.

Cancer Information

Information about cancer and its treatment is available from the National Cancer Institute's' Cancer Information Service (CIS) at 1-800-4-CANCER. The CIS provides this service for cancer patients, the public, and health care professionals.

CIS information specialists have extensive training in providing up-to-date and understandable information about cancer and cancer research, including specific regional information. They can also send you free printed material.

Mental Health Services

The asbestos-related illnesses in Libby have caused many people to suffer from feelings of fear, anxiety, anger, and grief. Stress-related illnesses are reported to be on the rise.

Help is available and people should not be embarrassed to ask for assistance!

The CARD operates the CARD Outreach Recovery Assistance (CORA) Program that provides free mental health services related to Libby's asbestos problems. For more information, call the CORA at 293-9274.

PHYSICAL AND MENTAL HEALTH RESOURCES
DEALING WITH ASBESTOS IN YOUR HOME
FINDING AN ASBESTOS SPECIALIST
ASBESTOS SAMPLING AND ANALYSIS
RISK ASSESSMENT

Asbestos in Your Home

In Libby, the most common types of asbestos are the *tremolite-actinolite series* (from the Grace mine) and *chrysotile* (associated with building products worldwide). Residents may encounter both types and should know what to do to protect their health and property.

EPA is working to determine the extent of mine-related asbestos sources and contamination in Libby. The goal is to sample all Libby residences and businesses in 2002.

As a resident, you are most likely to contact this material in the form of contaminated vermiculite (used as insulation or a soil amendment) or asbestos ore (used as decorative landscape rock or driveway gravel).

If you know or suspect you have these materials on your property, and were not contacted by EPA, please call the EPA Information Center at 293-6194.

Living With Libby Asbestos Until EPA Removes It

Inside - If you have vermiculite in your home, you should assume it is contaminated with asbestos. Sealed in the attic or walls, it poses little threat to you. However, if cracks or other openings are present, fibers can be released which creates a health risk. There is also a risk to residents or others who may be exposed during home repair, renovation, or demolition. You can minimize exposure by:

1. Sealing cracks and openings with caulk.
2. Preventing access to vermiculite-filled attics or crawl spaces.
3. Postponing remodeling that might release vermiculite (like installing light fixtures in ceilings, adding openings to vermiculite-filled walls, or running pipes through vermiculite-filled spaces).
4. Carefully sweeping (after wetting) any vermiculite that filters into living spaces. Homeowners may also consider purchasing HEPA vacuums or air filters.

Outside - If you have vermiculite in your garden or asbestos ore in your yard or driveway, you should minimize any disturbance to those materials. This includes digging in the soil and driving, walking, parking, or playing on the ore.

EPA intends to remove vermiculite from homes and businesses in Libby. If disturbance of the vermiculite must occur before EPA con conduct the removal, we recommend hiring a professional for the work.

Identifying and Handling *Other* Types of Asbestos in the Home

The building industry uses, or has used, thousands of asbestos-containing materials (ACMs) such as roofing and siding, fire protection material, residential building materials, heating and electrical wire insulation, appliance components, sheet flooring, ceiling and floor tile, caulk, and drywall. As late as 1989, the use of asbestos products in the U.S. exceeded 55,000 tons per year.

Asbestos in the materials used in new construction is almost always chrysotile asbestos and is not related to the W.R. Grace Mine. With the exception of the contaminated vermiculite discussed above, the biggest asbestos health threat in homes is from older ACMs, such as pipe wrap and furnace insulation, ceiling tiles, ceiling and wall texture, fireproofing, and wallboard. These materials are easily flaked (*friable*) and can be damaged, allowing asbestos fibers to be released. Other ACMs that are less friable and present a smaller hazard are floor tiles, linoleum, asphalt roofing, and asbestos cement siding.

If ACMs in your home are in good shape and are not in danger of being damaged, it may be best to just leave them alone.

Damaged or easily friable ACMs should be handled with care and repaired or removed by professionals. Your best source of information on this subject is the Asbestos Control Program in the Montana DEQ. They can provide you with information on asbestos, including State requirements for removal, transportation, and disposal and certification of contractors, consultants, and laboratories.

Additional info on asbestos can be found in the EPA booklet entitled Asbestos *in the Home – A Homeowner's Guide* and in a pamphlet entitled Asbestos *in Your Home*, coauthored by the EPA, the American Lung Association, and the Consumer Product Safety Commission.

Both are available in Libby from the EPA Information Center at 501 Mineral Ave. They provide information on sources of asbestos as well as sampling, handling, repairing, and removing asbestos containing materials from your home.

Dealing With Asbestos In Your Home
Finding an Asbestos Specialist
Asbestos Sampling and Analysis
Risk Assessment

Licensed/Certified Asbestos Inspectors, Abatement Contractors, Laboratories, Trainers, and Landfills

In 2002, EPA began removing vermiculite insulation from attics and other accessible interior and exterior spaces to reduce the threat to public health from asbestos in Libby. This may include as many as 3,600 homes, and take up to 3 years. The work will be done at no cost to residents.

This action is a result of the investigation and remediation of tremolite-series asbestos from the W.R. Grace Mine, so EPA will NOT be removing any other types of asbestos.

Why Might I Need an Asbestos Professional?

Although EPA is conducting removals of vermiculite insulation, some homeowners may have asbestos inspection, abatement, analysis, or disposal needs that cannot be addressed by EPA. These include:

- ✓ Identification and potential removal of **non-*Libby*** asbes*tos* (typically pipe wrap, furnace coatings, or siding).
- ✓ Removal of contaminated vermiculite from areas that are not normally accessible (such as interior walls), but may be exposed due to remodeling or construction projects.
- ✓ An immediate removal of contaminated vermiculite that would not be removed quickly enough under EPA's program to meet the owner's needs. An example might be a removal to satisfy a real estate transaction.
- ✓ Identification and potential removal of contaminated vermiculite that may be discovered by the homeowner after EPA has completed its removal program and has left Libby.

How Do I Find the Person or Information I Need?

The Asbestos Control Program at the Montana Department of Environmental Quality (DEQ) maintains a list of all licensed/ certified asbestos inspectors, abatement contractors, and laboratories in Montana. They also maintain a list of asbestos courses approved by the State of Montana for persons interested in training to be an asbestos inspector, worker, contractor/supervisor, or management planner. Finally, they have a list of Class II landfills that accept friable asbestos. **You can obtain the latest copies of the list by calling 444-3490 or by visiting their website at http://www.deq.state.mt.us/pcd/awm/acpl.**

- ✓ DEQ's Asbestos Control Program has the statutory authority to control and issue project permits, approve course work for accreditation of persons engaged in asbestos related occupations, and accredit persons to engage in asbestos-related occupations.
- ✓ By definition, an ACM is any material that contains more than 1% asbestos.
- ✓ An asbestos abatement project is the encapsulation, enclosure, removal, repair, renovation, placement in new construction, or demolition of friable or potentially friable ACM in a building, or the transportation or disposal of friable or potentially friable ACM.
- ✓ Abatement projects require a permit from the Asbestos Control Program and must be done by persons with a Montana Contractor/Supervisor or Worker accreditation.

Prevention of the disease and death associated with asbestos exposure is the principle factor behind asbestos regulations!

Montana Department of
ENVIRONMENTAL QUALITY

CAUTION!

Montana's asbestos rules do not regulate homeowners removing ACMs in their homes. However, transportation and disposal of the asbestos waste is regulated.

It is strongly recommended to use an abatement professional to ensure the work is done properly.

Homeowners who do the work themselves **must contact DEQ** to ensure they are meeting all requirements, including disposal in a landfill licensed to accept asbestos.

FINDING AN ASBESTOS SPECIALIST
ASBESTOS SAMPLING AND ANALYSIS
RISK ASSESSMENT

Sampling and Analysis

Sample Collection

EPA has collected thousands of environmental samples in Libby from air, dust, and solids. The samples have been collected from the W.R. Grace mine and from residences, businesses, and other properties in Libby and Lincoln County. To ensure health and safety, workers with the potential to contact asbestos are required to wear personal air samplers, and stationary air samplers are set up in various locations. Samples are collected by trained personnel.

- ✓ **Air Samples** – Collected with small, portable pumps worn by individuals, or larger, stationary pumps set up in one location. Air is drawn through a filter at a specific rate for a given time period. Asbestos and other breathable particles are trapped on the filter, which is sent to a lab for analysis.
- ✓ **Indoor Dust Samples** – Collected using a micro-vacuum that sucks dust-sized particles from specific areas (such as a windowsill). Air is drawn through a filter, which is sent for analysis. Results help determine if asbestos is present in the dust and might be stirred up into the breathing space. Asbestos may have settled as dust or been tracked inside on shoes or other items.
- ✓ **Solid Samples (soil, mine waste, or vermiculite)** – Collected from yards, gardens, driveways, and excavations. Yard and driveway samples are generally taken from the upper six inches of soil, while garden soil samples may be deeper. Waste samples are taken from open areas and may be taken from any depth. Vermiculite samples are generally taken from inside homes or other buildings. These solid samples may be taken to determine initial concentrations or to verify that a cleanup has been successful. Solid samples are generally collected using a small trowel or gloved fingers.

Do Sample Crews Wear Respirators When Sampling Residential Yards?

The use of respirators is complicated and is governed, in part, by OSHA regulations for worker safety. Workers may sometimes wear respirators outside if conditions show that they are potentially exposed to hazardous levels of asbestos and other contamination. As a safety precaution, EPA encourages people who suspect or know that vermiculite is present in their homes or yards to refrain from disturbing the material.

Analytical Methods

Methods for asbestos analysis vary in complexity and are selected based on data needs. Simplistically, samples are visually identified under a microscope by a trained technician. Observed fibers are viewed at various magnifications and counted according to the rules and capabilities of each method. Depending on the method, results can indicate the type and amount of asbestos present, and also the dimensions of each counted fiber. Methods currently in use or proposed for use in Libby are:

- ✓ **Phase contrast microscopy (PCM)** – The traditional technique for measurement of asbestos fibers in air and upon what many regulations are based (e.g., occupational exposure). Results are often used to estimate health risk from asbestos in air. PCM has limited utility because it cannot differentiate between asbestos and non-asbestos fibers. Thus, PCM use in Libby has been limited to specific purposes, often in conjunction with another analytical technique such as TEM.
- ✓ **Polarized light microscopy (PLM)** – Used to visually estimate the percent of asbestos in bulk samples, such as soil and insulation materials. It can differentiate between asbestos types, but cannot reliably detect asbestos in low concentrations (below 1%). Thus, PLM is being used in Libby as a *screening* method.
- ✓ **Transmission electron microscopy (TEM)** – TEM is more complex than PCM or PLM, and it uses a more sophisticated analytical instrument. TEM can distinguish between asbestos and non-asbestos fibers and asbestos types. It can be used at higher magnifications to identify asbestos fibers too small to be seen by other techniques. In Libby, two TEM methods (AHERA and the more complex ISO 10312) are used, depending on the data need.
- ✓ **Infrared spectroscopy (IR)** – This is a developmental, rapid-screening method, for use in determining the presence of Libby amphibole asbestos in soil at low concentrations. It is needed because PLM is not reliable for screening concentrations less than 1%.
- ✓ **Scanning electron microscopy (SEM)** – SEM is similar to TEM. It is capable of distinguishing asbestos fibers from non-asbestos fibers and is capable of higher magnifications than PCM. Its range of visibility is more limited than TEM. SEM is also limited in its ability for mineral identification.

In Libby, air samples are analyzed by PCM and TEM methods. Indoor dust samples are analyzed by TEM and, on occasion, PLM. Water samples are analyzed by TEM. Solid bulk samples (soil, mine waste, and bulk insulation) are analyzed by PLM, and a respirable fraction is sometimes and analyzed by TEM. SEM and IR may be used to analyze bulk samples for low levels of asbestos (concentration estimates below 1%). Method applications are regularly reviewed along with the advancement of new test methods.

Size Matters

EPA is very interested in the *size* of the asbestos fiber, particularly those longer than **5** microns and thinner than **0.5** microns. These fibers are thought to be more dangerous, because they are more difficult for the body to expel.

Size classes used in the analysis are:

- ✓ Less than **5** microns
- ✓ **Between 5 to 10** microns
- ✓ **Greater than 10** microns

A micron is too small to see with the naked eye. There are **25,400** microns in one inch!

Quality Assurance

All analysis is conducted by accredited national laboratories following protocols outlined in detailed, site-specific quality assurance plans that are available at EPA's local Information Center.

ASBESTOS SAMPLING AND ANALYSIS
RISK ASSESSMENT

Human Health Risk Assessment

What is a Human Health Risk Assessment?

A risk assessment is a formal, step-by-step, scientific process for quantifying health risks to residents, workers, and recreationalists. It uses standardized tools, formats, and scientifically accepted assumptions. Assessments are led by experienced toxicologists and must undergo rigorous review and scrutiny.

Superfund risk assessments are conducted to evaluate the potential human health risks posed by uncontrolled hazardous substance sites. The process has four steps:

1. **Data collection.** Provides data on site history, exposure potential, and contaminant types and distribution.
2. **Exposure assessment.** Estimates how much and in what ways exposures may occur.
3. **Toxicity assessment.** Addresses the potential of contaminants to cause harmful effects in humans.
4. **Risk characterization.** Integrates the results of the previous steps and calculates the risk to human health if no action is taken.

Each step involves the analysis of specific data or assumptions related to the areas of contamination and potential exposure to the contamination.

Why Bother with a Risk Assessment?

People may wonder why it is necessary to conduct a risk assessment at a site where almost 200 people are reported to have died from diseases related to the primary contaminant – asbestos. To some, it seems clear that the asbestos from the Grace mine has and will continue to pose unacceptable health risks in Libby unless it is cleaned up.

However, anecdotal evidence is not enough. Site cleanups may cost tens of millions of dollars, and Superfund regulations require that EPA cleanup decisions be based on risk. These actions may be challenged in court by the Potentially Responsible Party (in this case, W.R. Grace), so they must be scientifically defensible. Also, under current law, a material must contain one percent or more asbestos to be considered an asbestos containing material, and cleanups below that limit have not been done.

Risk assessment is an ongoing process and will continue until cleanup decisions are made. In Libby, a *screening level* risk assessment was done under the Emergency Response Program. Although somewhat qualitative, it identified complete exposure pathways and determined if risks were high enough to warrant an immediate response. EPA used it, in conjunction with numerous other tools, to determine the next steps at the site.

As new data are collected, they will be assessed to add to the current understanding of risks at the site in a Baseline Risk Assessment. These data will help EPA answer important questions, such as:

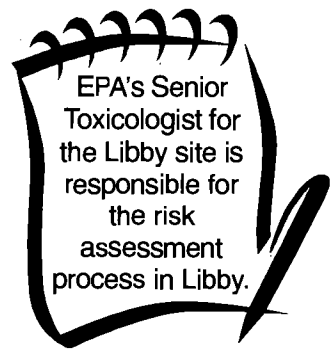
- ✓ What concentration of asbestos presents a health risk?
- ✓ Which sources of asbestos pose the greatest risk?
- ✓ Which methods of remediation would offer the greatest risk protection?

Clearly, the risk assessment process is vital to successful site investigation and cleanup. It helps to ensure that the site cleanup will be effective in reducing the current and future risks at the site to acceptable levels.

Results of EPA's Preliminary Risk Assessment for Libby, Montana

In December 2001, EPA completed a preliminary, screening-level risk assessment for emergency response activities entitled ***Risk Assessment - Amphibole Mineral Fibers in Source Materials in Residential and Commercial Areas of Libby Pose an Imminent and Substantial Endangerment to Public Health***. EPA also issued a memorandum that presented the rationale for determination of imminent and substantial endangerment to public health from asbestos contamination in various types of source materials in and around Libby. In summary, those findings are:

1. Amphibole asbestos occurs in ore and processed vermiculite from the W.R. Grace mine.
2. Asbestos fibers of this type are hazardous to humans when inhaled.
3. Asbestos fibers characteristic of those from the mine are present in many sources locally. Outdoor sources include yard and garden soil, driveway material, and mine waste materials. Indoor sources include dust and vermiculite insulation.
4. Disturbance of contaminated source materials through common activities by residents or workers can result in exposure to breathable asbestos fibers in air.



5. Concentrations of fibers in air generated by disturbance of source materials may exceed OSHA occupational exposure standards.
6. Estimated excess cancer risks caused by airborne fibers from disturbance of the material exceed EPA's acceptable risk range.

EPA concluded that source materials such as soil and soil-like media, dust, and vermiculite that contain asbestos are a likely source of **ongoing** release **of hazardous fibers to** air in Libby. In light of evidence of human asbestos exposure and the associated increase in human health risk, it was recommended that EPA take appropriate steps to reduce or **eliminate exposure pathways** to these materials to protect area residents and workers.

The entire risk assessment can be accessed online at http://www.epa.gov/region8/superfund/libby/risksummary.html

EPA's Asbestos Cleanup Activities

Emergency Response Cleanup Activities

EPA's emergency response work in Libby has focused on removing as many source areas as possible. As of August 2002, EPA had safely and thoroughly cleaned up over 250,000 cubic yards of asbestos-contaminated waste and disposed of them at the W.R. Grace Mine. These cleanups included investigation, excavation, demolition, disposal, and restoration activities. The cleanups have entailed detailed planning and implementation to ensure public and worker safety. The locations of the major cleanups are shown on the back cover.

Since November 1999, EPA has:

- ✓ **Opened the EPA Information Center at 501 Mineral Ave.**
- ✓ **Investigated the sources of contamination**
- ✓ **Removed several major source areas**
- ✓ **Collected samples and assessed data**
- ✓ **Reconsidered standard protocols for analyzing asbestos samples and assessing risk from asbestos exposure**
- ✓ **Begun a formal human health risk assessment**
- ✓ **Tested methods of remediating indoor contamination**
- ✓ **Added Libby to the National Priorities List**
- ✓ **Expanded a Superfund investigation to include extensive sampling and analysis and additional risk assessment**
- ✓ **Authorized and begun removal of vermiculite from Libby homes and businesses**
- ✓ **Built a special cell in the Lincoln County Landfill for disposal of asbestos wastes**

Vermiculite Removal in Libby Homes and Businesses

In 2002, EPA began removing vermiculite from the interiors and exteriors of Libby homes and businesses. EPA's asbestos abatement contractors are using a vacuum truck to extract the vermiculite inside and backhoes to dig up the material outside. Air sampling is conducted during and after the removal, to ensure that hazardous levels of asbestos are not present.

Residents are being relocated during the interior removals, which are expected to take approximately one week for each house. EPA has developed specific plans for conducting these removals. The wprk should be completed by 2005. In general, EPA will remove vermiculite and restore the home, interior and exterior, to its pre-removal condition.

Non-Emergency Investigation and Remediation Activities

The Libby Site was proposed to the National Priorities List (NPL) in February 2002. The NPL is a list of hazardous waste sites that are eligible for extensive, long-term cleanup under Superfund. An NPL listing enables a site to receive federal funds for cleanup while EPA seeks to recover costs from the responsible parties. If there are no responsible parties who can pay for the work, the Superfund may be used.

Work in the Community

- ✓ Libby area soils and insulation will be the focus of EPA's work from 2002 through 2005.
- ✓ EPA's goal is to collect soil samples at every residence and business in Libby (over 3,000).
- ✓ Sampling began in summer 2002 and should be completed by 2003.
- ✓ Results will help establish a site boundary, based on where asbestos is found to pose a risk.
- ✓ EPA will design and implement appropriate cleanup actions.

Work at the Mine Site

- ✓ Investigations at the mine site will be minimal until the risks in the town are eliminated.
- ✓ In 2003, air blowing off the mine site and spring runoff from the mine will be monitored to obtain data for assessment of the mine.
- ✓ These results will provide additional information to make decisions about potential cleanup actions for the mine.

When Cleanup is Complete

EPA can only sample where contamination is most likely to occur and to be disturbed. This generally means accessible areas indoors and near ground surface outdoors. It is impossible to sample everywhere. Because of this, some isolated pockets of vermiculite may be missed in our cleanup. It is important to be able to recognize vermiculite, should you encounter it in the future. If you do not know what it looks like, please visit the EPA Information Center to view our samples.

If you know or think you have found vermiculite, do not disturb it! Contact the EPA Information Center or the County Health Department. EPA is currently developing a plan for dealing with these situations in the long-term at no cost to the resident.

For more information on the work being conducted contact EPA's Information Center at 293-6194.

EPA's Asbestos Cleanup Activities

Contacts and Resources

There are many individuals, agencies, and organizations working to solve the asbestos-related problems in Libby. If you have a desire to get involved in the process, need help, or just want to stay informed, there are many opportunities to do that.

Visit the EPA Information Center

Your primary local contact for information about the Libby Site is the EPA's Information Center at 501 Mineral Avenue (293-6194).

The Information Center has many fact sheets and other publications that are free to the public. The staff can answer many of your questions or direct you to the proper source.

You can also see various samples of vermiculite.

Printed Resources

A variety of printed resources have been prepared by EPA, or other government agencies, and are available to the public.

Detailed plans, reports, studies, and decision documents are also available.

There are short descriptive pamphlets, fact sheets, Q&As, booklets, brochures, news releases, and news clippings. Stop by the EPA Information Center to view these materials and/or obtain copies.

Attend a CAG Meeting

Representatives from diverse interests in Libby make up the Community Advisory Group (CAG). The CAG provides a forum for community residents to hear the latest site information, find out about documents that are available for review, hear and make presentations, express concerns, and make recommendations.

EPA, ATSDR, and DEQ support the CAG. Attending the monthly meetings is an excellent opportunity to stay informed. Meetings are usually held the second Thursdays of each month, in the Ponderosa Room of City Hall, from 7 to 9 pm. Call 293-6194 to find out when the next meeting is.

U.S. Environmental Protection Agency

General Information on EPA's Work in Libby

EPA Information Center 293-6194
501 Mineral Avenue, Libby, MT 59923
Community Involvement Coordinator
Wendy Thomi (thomi.wendy@epa.gov) (866) 457-2690*
Helena, MT 457-5037

EPA's Emergency Response Activities through 2002

On-Scene Coordinators (800) 227-8917*
Paul Peronard (peronard.paul@epa.aov) (303) 312-6808
Due Nguyen (nguyen.duc@epa.gov) (303) 312-6509

EPA's Investigation and Cleanup Issues, 2002 & Beyond

Remedial Project Manager (800) 227-8917*
Jim Christiansen (christiansen.jim@epa.gov) (303) 312-6748

Human Health Risk Assessment Issues

Sr. Medical Officer and Toxicologist
Dr. Aubrey Miller (303) 312-7023

Agency for Toxic Substances and Disease Registry (800) 457-2590*

Asbestos Related Disease Information

Dan Strausbaugh (strausbaugh.dan@epa.gov) 457-5007

Montana Department of Environmental Quality (406) 444-2544

Mine Waste Cleanup Bureau

Craig French (cfrench@state.mt.us) 444-3072

Asbestos Control Program

John Podolinsky (jpodolinsky@state.mt.us) 444-3490

*toll free phone number, when calling from Montana

Read the Weekly Q&A in the Local Papers

EPA publishes a Q&A notice in the *Montanian*, *Western News*, and *Tobacco Valley News* each week that answers a question on the work being conducted in Libby.

TAG Program

EPA provides $50,000 technical assistance grants (TAGs) to communities. TAGs can be used to hire a technical advisor to act as an independent expert, review site-related technical information, and explain it to community members.

A group applying for a TAG must be nonprofit and incorporated. The group contributes 20 percent of the total project costs to be supported by TAG funds through cash, donated supplies, and/or volunteered services. There may only be one TAG award per NPL site. Please call the EPA Information Center to find out how to get involved in the TAG.

EPA's Community Involvement Plan

EPA's Community Involvement Plan is a good source of local information on Libby, including demographics, community concerns, and local and national contacts. Stop by the EPA Information Center, if you'd like to see the plan.

Still Not Getting the Info You Need?

EPA wants your feedback.
Call Wendy Thomi (toll-free 1-866-457-2690) to provide suggestions on how EPA can improve its communication.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Local Government and Other Contacts

City of Libby	
Mayor	293-2731
Libby School District	
Superintendent	293-8811
Lincoln County Government Offices	
Commission	293-7781 x207
Department of Environmental Health	293-7781 x228
Health Officer	293-7781 x228
Other	
Chamber of Commerce	293-4167
Economic Development Council	293-8406
Lincoln Go. Asbestos Victims Relief Organization	293-5535
W.R. Grace Office	293-3964

Services

Screening for Asbestos Related Disease

Libby Center for Asbestos Related Disease (CARD)	293-9274

Mental Health Services

CARD Outreach Recovery Assist. Program (CORA)	293-9274

Smoking Cessation Assistance

Libby Community Interagencies	293-3951

Current and Archived Newspaper Coverage

Montanian, Libby, MT	293-8202
Western News, Libby, MT	293-4124
Online: www.libby.org/WesternNews	
Tobacco Valley News, Eureka, MT	295-2514
Online: www.tobaccovalleyhews.com	
Daily Interlake, Kalispell, MT	755-7000
Online: www.dailyinterlake.com	
Missoulian, Missoula, MT	(800) 366-7102
Online: www.missoulian.com	
Spokesman-Review, Spokane, WA	(800) 338-8801
Online: www.spokesmanreview.com	
Seattle Post Intelligencer, Seattle, WA	(800) 542-0820
Online: www.seattlepi.com	

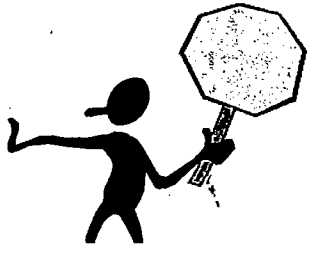
Unless otherwise noted, all area codes are 406

CONTACTS AND RESOURCES

Libby is a Great Place to Live!

Libby is a welcoming community set amid a recreational paradise. Because the W.R. Grace mine and mill are no longer operating, and EPA has cleaned up the major source areas in town, the ongoing asbestos risk to residents is primarily from exposure to vermiculite that may be on their property. EPA is in the process of removing the vermiculite from all affected commercial and residential properties in Libby. The vermiculite is easy to identify, and residents should use care not to disturb it. Vermiculite is most commonly found as insulation in attics, walls, and crawl spaces, or as a soil amendment in the garden. If you are not sure what vermiculite looks like, please visit the EPA Information Center to see samples.

The following items are tips to protect your health and property value:



Use Caution and Handle With Care

Asbestos is harmful to human health if inhaled, and you should minimize exposures whenever possible. In Libby, the major source areas have been removed, and the remaining exposures are likely to be limited to personal property. See "Dealing with Asbestos in Your Home" and "Finding an Asbestos Specialist" for information on living with asbestos before EPA removes it. If you believe you have vermiculite on your property, and EPA has not contacted you by October 2002, please call the EPA Information Center. You can also visit us to see samples of vermiculite so you know what to look for.

Don't Miss Your Opportunity for Cleanup

EPA's goal is to remove the vermiculite from all contaminated properties in the Libby area. The cleanups are being done at no cost to the property owner and are voluntary. However, once EPA is finished, there will be no further opportunities for owners to have a cleanup conducted. Owners who elected not to participate while EPA was in town will have to deal with any vermiculite on their own.

EPA Will Get to Your House

EPA's goal is to finish the residential cleanups in three years. Cleanup order is based on the amount of contamination (potential risk) and the home's location. Homes with multiple sources and high levels of Libby asbestos will generally be cleaned up faster than homes with single sources and low levels. Homes where asbestos is readily accessible to people or where a home sale is pending will also be a priority. Finally, a lower priority home may be grouped with a higher priority home to cut cleanup time, ensuring that EPA can meet the cleanup schedule. If you have not been contacted by EPA about your home, please call the EPA Information Center!

Protect Your Health

Protect your lungs by preventing exposure to asbestos or tobacco smoke. This is especially important if you already have a history of asbestos exposure. If you have been exposed, get regular checkups, adopt healthy habits, and notify your doctor of your exposure and any changes in your lung function. Stay informed. Researchers believe there are new treatments on the horizon. See "Asbestos-Related Health Risks" and "Physical and Mental Health Resources" for more information.

Remember That Help is Available

There are numerous services available to you to help you with physical or mental health concerns, real estate transactions, and general assistance on asbestos related issues. You also have plenty of opportunity to get involved by attending public meetings, reading EPA Q&A's and other publications, and visiting the EPA Information Center. See "Contacts and Resources" for more information.

Libby is a nice community in a beautiful location. It may be difficult to live with the variety of cleanup actions that are ongoing; but, pver the next few years, vermiculite source areas will be cleaned up and residential cleanups will progress. After cleanup, improvements such as the new running tracks at the middle and high schools will be nice amenities for the community's school kids. EPA realizes that sampling and clean-up activities can be disruptive. However, these activities are essential in ensuring that Libby is a safe place to live and that residents do not have to worry about ongoing exposure.

If you have any questions or concerns, please call the EPA Information Center at 293-6194.

You can also visit EPA's Libby website at http://www. epa.gov/reglon8/superfund/libby/

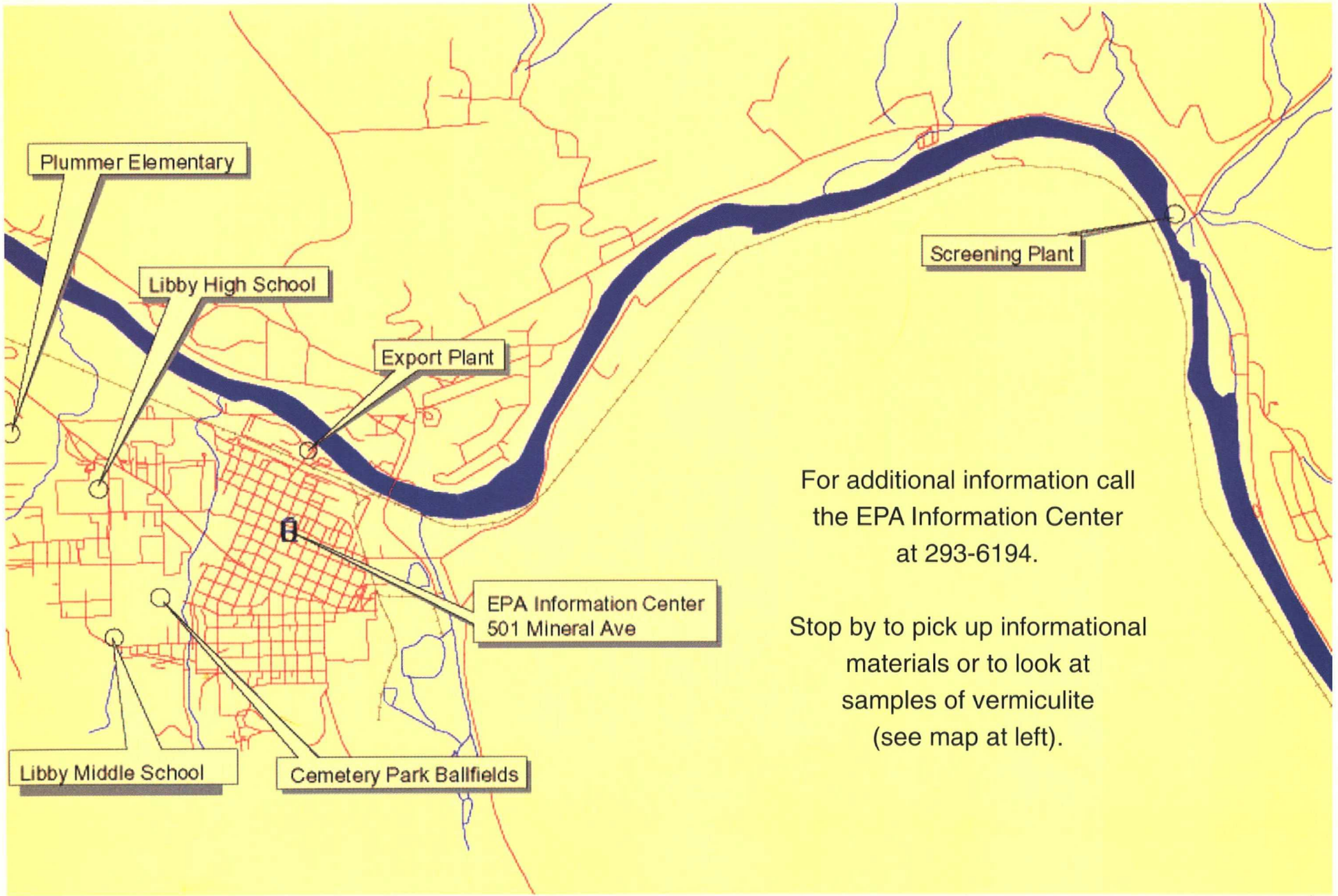
EPA Region 8,
999 18th St. Suite 300,
Denver, CO 80202-2466

EPA Region 8, Montana Office,
10 W. 15th St.; Suite 3200,
Helena, MT 59626

Photo credits: Cover – Libby, LibbyMT.com; vermiculite, ATSDR. Inside cover – loggers and bikers, LibbyMT.com; children, LibbyMT.org/Nordicfest; elk, T. Hiimo; trout, J. Counter. Other - cleanup photo, CDM. Original art on cover by Colton Cannon.

Libby, Montana

Locations of major cleanups and the EPA Information Center



For additional information call the EPA Information Center at 293-6194.

Stop by to pick up informational materials or to look at samples of vermiculite (see map at left).

Prepared for U.S. EPA, Region VIII by U.S. DOT Volpe Center (www.volpe.dot.gov) and CDM (www.cdm.com).

Is my health at risk from previous exposures to the asbestos in the insulation?

If you removed or disturbed the insulation, it is possible that you inhaled some asbestos fibers. Also the disturbance may have resulted in the fibers being deposited into other areas of the home. Exposure to asbestos increases your risk of developing lung disease. That risk is made worse by smoking. In general, the greater the exposure to asbestos, the greater the chance of developing harmful health effects. Disease symptoms may take several years to develop following exposure. If you are concerned about possible exposure, consult a physician who specializes in lung diseases (pulmonologist).

Where can I get information on testing or removal of the insulation?

EPA and ATSDR strongly recommend using a trained and certified professional to conduct removal work. Removing the insulation yourself could potentially spread asbestos fibers throughout your home, putting you and your family at risk of inhaling these fibers.

For certified asbestos removal professionals in your area, refer to your local Yellow Pages. Your State Environmental Agency can confirm that the company's credentials are current.
You can find your State Agency at:
http://www.epa.gov/epahome/whereyoulive.htm

Currently, there are specific technical issues involving vermiculite sampling that can complicate testing for the presence of asbestos fibers and interpreting the risk from exposure. EPA and ATSDR are not recommending at this time that homeowners have vermiculite attic insulation tested for asbestos. As testing techniques are refined, EPA and ATSDR will provide information to the public on the benefits of testing that produce more definitive and accurate test results.

What if I have work-related exposure to vermiculite?

Workers who have had significant past exposure, or have significant ongoing exposure to asbestos, to vermiculite from Libby, or to other asbestos-contaminated materials should consider getting a medical exam from a physician who knows about diseases caused by asbestos. For more information and to obtain a fact sheet concerning occupational exposure to vermiculite, contact the **National Institute for Occupational Safety and Health (NIOSH) at: 1-800-35-NIOSH, or http://www.cdc.gov/niosh/homepage.html**

Where can I get more information?

Information on the Agency's guidance on asbestos and vermiculite, including insulation and horticultural products, has previously been available on EPA's website. Additional information on vermiculite and asbestos is available from the following sources:

General Information
EPA's Toxic Substances Control Act (TSCA) Assistance Information Service: **Asbestos Line: 1-800-471-7127**

EPA Asbestos Ombudsman
1-800-368-5888

EPA's Asbestos Home Page
http://www.epa.gov/asbestos/

Health Information
Agency for Toxic Substances and Disease Registry (ATSDR) http://www.atsdr.cdc.gov

Worker Safety
Occupational Safety and Health Administration (OSHA) http://www.osha.gov

National Institute for Occupational Safety and Health (NIOSH) http://www.cdc.gov/niosh/homepage.html

Consumer Products
Consumer Product Safety Commission (CPSC)
http://www.cpsc.gov

Mineralogy
United States Geological Survey (USGS)
http://minerals.usgs.gov/minerals/

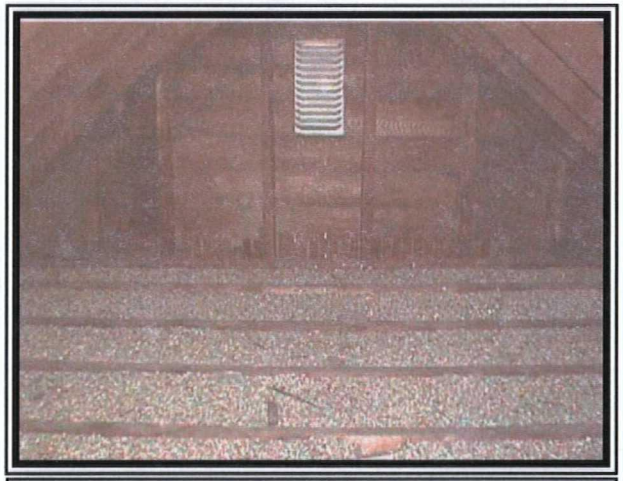
EPA ATSDR AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

United States Environmental Protection Agency

Agency for Toxic Substances and Disease Registry

Current Best Practices for

Vermiculite Attic Insulation



EPA 747-F-03-001 May 2003

What is vermiculite insulation?

Vermiculite is a naturally occurring mineral that has the unusual property of expanding into worm-like accordion shaped pieces when heated. The expanded vermiculite is a light-weight, fire-resistant, absorbent, and odorless material. These properties allow vermiculite to be used to make numerous products, including attic insulation.

Do I have vermiculite insulation?

Vermiculite can be purchased in various forms for various uses. Sizes of vermiculite products range from very fine particles to large (coarse) pieces nearly an inch long. Vermiculite attic insulation is a pebble-like, pour-in product and is usually light-brown or gold in color. The pictures in the center of this pamphlet and on the cover show several samples of vermiculite attic insulation.

Is vermiculite insulation a problem?

Prior to its close in 1990, much of the world's supply of vermiculite came from a mine near Libby, Montana. This mine had a natural deposit of asbestos which resulted in the vermiculite being contaminated with asbestos. Attic insulation produced using vermiculite ore, particularly ore that originated from the Libby mine, may contain asbestos fibers. Today, vermiculite is mined at three U.S. facilities and in other countries which have low levels of contamination in the finished material.

How does asbestos cause health problems?

Asbestos can cause health problems when inhaled into the lungs. If products containing asbestos are disturbed, thin, lightweight asbestos fibers are released into the air. Persons breathing the air may breathe in asbestos fibers. Continued exposure increases the amount of fibers that remain in the lung. Fibers embedded in lung tissue over time may result in lung diseases such as asbestosis, lung cancer, or mesothelioma. Smoking increases your risk of developing illness from asbestos exposure.

What should I do if I have vermiculite attic insulation?

DO NOT DISTURB IT. Any disturbance has the potential to release asbestos fibers into the air. Limiting the number of trips you make to your attic and shortening the length of those trips can help limit your potential exposure.

EPA and ATSDR strongly recommend that:

- Vermiculite insulation be left **undisturbed** in your attic. Due to the uncertainties with existing testing techniques, it is best to assume that the material may contain asbestos.
- You should not store boxes or other items in your attic if retrieving the material will disturb the insulation.
- Children should not be allowed to play in an attic with open areas of vermiculite insulation.
- If you plan to remodel or conduct renovations that would disturb the vermiculite, hire professionals trained and certified to handle asbestos to safely remove the material.
- You should **never attempt** to remove the insulation yourself. Hire professionals trained and certified to safely remove the material.

What if I occasionally have to go into my attic?

EPA and ATSDR strongly recommend that homeowners make every effort **not to disturb** vermiculite insulation in their attics. If you occasionally have to go into your attic, current best practices state you should:

1. Make every effort to stay on the floored part of your attic and to not disturb the insulation.
2. If you **must** perform activities that may disturb the attic insulation such as moving boxes (or other materials), do so as gently as possible to minimize the disturbance.
3. Leave the attic immediately after the disturbance.
4. If you need work done in your attic such as the installation of cable or utility lines, hire trained and certified professionals who can safely do the work.
5. It is possible that vermiculite attic insulation can sift through cracks in the ceiling, around light fixtures, or around ceiling fans. You can prevent this by sealing the cracks and holes that insulation could pass through.
6. Common dust masks are **not effective** against asbestos fibers. For information on the requirements for wearing a respirator mask, visit the following OSHA website: **http://www.osha-slc.gov/SLTC/respiratoryprotection/index.html**

What are the next steps?

The guidance provided in this brochure reflects the current testing technology and knowledge of precautions one may take regarding vermiculite attic insulation. EPA is initiating further studies on vermiculite attic insulation and pursuing other asbestos related issues. Additional information will be provided to the public via the EPA and ATSDR websites and through additional outreach materials as it becomes available.